I

ON LOCKE'S ESSAY ON HUMAN UNDERSTANDING,[1] 1696

[*From the French*]

I FIND so many marks of unusual penetration in what Mr. Locke has given us on the Human Understanding and on Education, and I consider the matter so important, that I have thought I should not employ the time to no purpose which I should give to such profitable reading; so much the more as I have myself meditated deeply upon the subject of the foundations of our knowledge. This is my reason for putting upon this sheet some of the reflections which have occurred to me while reading his Essay on the Understanding.

Of all researches, there is none of greater importance, since it is the key to all others. The first book considers chiefly the principles said to be born with us. Mr. Locke does not admit them, any more than he admits innate ideas. He has doubtless had good reasons for opposing himself on this point to ordinary prejudices, for the name of ideas and principles is greatly abused. Common philosophers manufacture for themselves principles according to their fancy; and the Cartesians, who profess greater accuracy, do not cease to intrench themselves behind so-called ideas of extension, of matter, and of the soul, desiring to avoid thereby the necessity of proving what they advance, on the pretext that those who will meditate on these ideas will discover in them the same thing as they; that is to say, that those who will accustom themselves to their jargon and mode of thought will have the same prepossessions, which is very true.

My view, then, is that nothing should be taken as first principles but experiences and the axiom of identity or (what

[1] Erdmann, *Leibnitii Opera Philosophica*, pp. 136–139. — TR.

is the same thing) contradiction, which is primitive, since otherwise there would be no difference between truth and falsehood; and all investigation would cease at once, if to say yes or no were a matter of indifference. We cannot, then, prevent ourselves from assuming this principle as soon as we wish to reason. All other truths are demonstrable, and I value very highly the method of Euclid, who, without stopping at what would be supposed to be sufficiently proved by the so-called ideas, has demonstrated (for instance) that in a triangle one side is always less than the sum of the other two. Yet Euclid was right in taking some axioms for granted, not as if they were truly primitive and indemonstrable, but because he would have come to a standstill if he had wished to reach his conclusions only after an exact discussion of principles. Thus he judged it proper to content himself with having pushed the proofs up to this small number of propositions, so that it may be said that if they are true, all that he says is also true. He has left to others the task of demonstrating further these principles themselves, which besides are already justified by experience; but with this we are not satisfied in these matters. This is why Apollonius, Proclus, and others have taken the pains to demonstrate some of Euclid's axioms. Philosophers should imitate this method of procedure in order finally to attain some fixed principles, even though they be only provisional, after the way I have just mentioned.

As for ideas, I have given some explanation of them in a brief essay printed in the "Actes des Sçavans"[1] of Leipzig for November, 1684 (p. 537), which is entitled *Meditationes de Cognitione, Veritate, et Ideis;*[2] and I could have wished that Mr. Locke had seen and examined it; for I am one of the most docile of men, and nothing is better suited to advance our thought than the considerations and remarks of clever persons, when they are made with attention and sincerity. I shall only say here, that true or real ideas are those whose

[1] The "Acta Eruditorum," Lipsiae, 1682–1731. — Tr.

[2] Gerhardt, Vol. 4, pp. 422–426; Erdmann, pp. 78–81. Translated in part by Sir William Hamilton, *Lectures on Logic*, Lect. X., ¶ XXX., pp. 127–129, Amer. ed.; and complete by George M. Duncan, *The Philosophical Works of Leibnitz*, pp. 27–32, New Haven: Tuttle, Morehouse, & Taylor, 1890; also by Professor Thomas Spencer Baynes, in the Appendix to his edition of the Port Royal Logic. — Tr.

execution we are assured is possible; the others are doubtful, or (in case of proved impossibility) chimerical. Now the possibility of ideas is proved as much *a priori* by demonstrations, by making use of the possibility of other more simple ideas, as *a posteriori* by experience; for what exists cannot fail to be possible. But primitive ideas are those whose possibility is indemonstrable, and which are in truth nothing else than the attributes of God.

I do not find it absolutely essential for the beginning or for the practice of the art of thinking to decide the question whether there are ideas and truths born with us; whether they all come to us from without or from ourselves; we will reason correctly provided we observe what I have said above, and proceed in an orderly way and without prejudice. The question of the origin of our ideas and of our maxims is not preliminary in Philosophy, and we must have made great progress in order to solve it successfully. I think, however, that I can say that our ideas, even those of sensible things, come from within our own soul,[1] of which view you can the better judge by what I have published[2] upon the nature and connection of substances and what is called the union of the soul with the body. For I have found that these things had not been well understood. I am nowise in favor of Aristotle's *tabula rasa;* and there is something substantial in what Plato called *reminiscence.* There is even something more; for we not only have a reminiscence of all our past thoughts, but also a presentiment of all our future thoughts. It is true that this is confused, and fails to distinguish them, in much the same way as when I hear the noise of the sea I hear that of all the particular waves which make up the noise as a whole, though without discerning one wave from another. Thus it is true in a certain sense, as I have explained, that not only our ideas, but also our sensations, spring from within our own soul, and that the soul is more independent than is thought, although it is always true that nothing takes place in it which is not deter-

[1] The French is: "de nostre propre fonds." — Tr.

[2] In the "Journal des Savants," June, 1695. For the piece, *cf.* Gerhardt, Vol. 4, pp. 477 *sq.* (first sketch 470 *sq.*); and the portion of his introduction and notes referring to the same, Vol. 4, pp. 414–417; Erdmann, pp. 124–128; *cf.* also pp. 129–136. For the translation, Appendix, pp. . — Tr.

mined, and nothing is found in creatures that God does not continually create.

In Book II., which comes to the details of ideas, I admit that the reasons brought forward by Mr. Locke to prove that the soul sometimes exists without thinking of anything, do not appear to me convincing, unless he gives the name of thoughts to those perceptions only which are sufficiently noticeable to be distinguished and retained. I hold that the soul (and even the body) is never without action, and that the soul is never without some perception: even in dreamless sleep we have a confused and dull sensation of the place where we are; and of other things. But even if experience should not confirm the view, I believe that it may be demonstrated. It is much the same as we cannot prove absolutely by experience whether there is a vacuum in space, and whether there is rest in matter. Nevertheless, questions of this kind appear to me, as well as to Mr. Locke, to be decided demonstratively.

I admit the difference which he puts with much reason between matter and space; but as for the vacuum, many clever people have believed in it. Mr. Locke is of this number. I was nearly persuaded of it myself; but I gave it up long ago. And the incomparable Mr. Huygens, who was also for the vacuum and the atoms, began at last to reflect upon my reasons, as his letters can testify. The proof of the vacuum derived from motion, of which Mr. Locke makes use, assumes that body is originally hard, and that it is composed of a certain number of inflexible parts. For in this case it would be true, whatever finite number of atoms might be taken, that motion could not take place without a vacuum. But all the parts of matter are divisible and even pliable.

There are also some other things in this second book which arrest my attention: for example, when it is said (chap. 17) that infinity should be attributed only to space, time, and numbers. I believe, indeed, with Mr. Locke that, properly speaking, we may say that there is no space, time, nor number which is infinite, but that it is only true that however great[1] may be

[1] Gerhardt's text seems here, for some reason, to be defective. It reads thus: "Mais qu'il est seulement vray que pour grand que luy sans fin," etc. Erdmann's seems the more correct, and is therefore followed in the translation. It reads thus: "Mais qu'il est seulement vrai que pour grand que soit un espace, un tems, ou un nombre, il y en a toujours un autre plus grand que lui

a space, a time, or a number, there is always another greater than it without end; and that thus the true infinite is not found in a whole composed of parts. It is none the less, however, found elsewhere; namely, in the *absolute*, which is without parts, and which has influence over compound things, because they result from the limitation of the absolute. The *positive infinite*, then, being nothing else than the absolute, it may be said that there is in this sense a positive idea of the infinite, and that it is anterior to that of the finite. For the rest, in rejecting a composite infinite, we do not deny the demonstrations of the geometers *de Seriebus infinitis*, and particularly what the excellent Mr. Newton has given us, not to mention my own contributions to the subject.

As for what is said (chap. 30) *de ideis adæquatis*, it is allowable to give to the terms the signification which one finds pertinent. Yet without finding fault with Mr. Locke's meaning, I put degrees in ideas, according to which I call those *adequate* in which there is nothing more to explain, much the same as in numbers. Now all ideas of sense-qualities, as of light, color, heat, not being of this nature, I do not reckon them among the adequate. So it is not through themselves, nor *a priori*, but through experience, that we know their reality or possibility.

There are further many good things in Book III. in which he treats of words or terms. It is very true that everything cannot be defined, and that sense-qualities have no *nominal definition:* thus they may be called primitive in this sense; but they can none the less receive a *real definition.* I have shown the difference between these two kinds of definition in the meditation[1] cited above. The *nominal definition* explains the name by the marks of the thing; but the *real definition* makes known *a priori* the possibility of the thing defined. For the rest, I strongly commend Mr. Locke's doctrine of the demonstrability of moral truths.

The fourth or last book, which treats of the knowledge of truth, shows the use of what has just been said. I find in it, as well as in the preceding books, an infinite number of beauti-

sans fin." p. 138 a. *Cf.* also *Leibniz's New Essays concerning the Human Understanding. — A Critical Exposition*, by John Dewey, Ph.D. pp. 190. Chicago: S. C. Griggs & Co., 1888. — Tr.

[1] I.e. *Meditationes de Cognitione, Veritate, et Ideis.* — Tr.

ful reflections. To make suitable remarks upon them would be to make a book as large as the work itself. It seems to me that the axioms receive therein a little less consideration than they deserve. The apparent reason for this is that, excepting those of the mathematicians, we ordinarily find none which are important and solid: I have tried to remedy this defect. I do not despise identical propositions, and I have found that they are of great use even in analysis. It is very true that we know our own existence by an immediate intuition, and that of God by demonstration; and that a mass of matter, whose parts are without perception, cannot make a thinking whole. I do not despise the argument invented some centuries ago by Anselm, archbishop of Canterbury, which proves that the perfect being must exist; although I find that the argument lacks something, because it assumes that the perfect being is possible. For if this single point were proved in addition, the whole demonstration would be complete.

As for the knowledge of other things, it is very well said, that experience alone does not suffice for a sufficient advance in Physics. A penetrating mind will draw more conclusions from some quite ordinary experiences, than another could draw from the most choice; besides, there is an art of experimenting upon and, so to speak, questioning nature. Yet it is always true that we can make progress in the details of Physics only in proportion as we have experience.

Our author shares with many able men the opinion that the forms of logic are of little use. I should be quite of another opinion, and I have often found that the paralogisms, even of mathematics, are the faults of form. Mr. Huygens has made the same observation. Much might be said upon this point, and many excellent things are despised because the use of which they are capable is not made of them. We are inclined to despise what we have learned in the schools. It is true we learn there many useless things; but it is good to exercise the function *della Crusca*,[1] *i.e.* to separate the good from the bad.

[1] "*La Crusca*, a celebrated academy of Florence, founded in 1582, for the purpose of maintaining the purity of the Italian language, that is to say, of separating the bran (*crusca*) from the flour: hence the name." Duncan's note. *Philos. Works of Leibnitz*, p. 378.

Mr. Locke can do this as well as any one whatsoever; and in addition he gives us important thoughts of his own invention; his penetration and fairness appear everywhere.[1] He is not only an assayer, but he is also a transmuter by the increase of good metal he gives. Should he continue to present it to the public, we should be greatly indebted to him.

[1] Erdmann omits this clause. — TR.

PREFACE

THE Essay on the Understanding, by a distinguished Englishman, being one of the most beautiful and esteemed works of this period, I have resolved to make some remarks upon it, because having sufficiently meditated for a long time upon the same subject and upon the greater part of the matters therein touched upon, I have thought that it would be a favorable opportunity to publish something under the title of "New Essays on the Understanding," and to procure a favorable reception to my thoughts, by putting them in so good company. I[1] have thought also that I could profit from the labor of another not only to lessen my own (since in fact it is less difficult to follow the thread of a good author than to work wholly independently), but further to add something to what he has given us, which is always easier than to start from the beginning; for I think I have cleared up some difficulties which he had left in their entirety. Thus his reputation is an advantage to me; having for the rest a disposition to render justice, and very far from wishing to diminish the esteem in which this work is held, I would increase it, if my approval carried any weight. It is true I often differ in my views (from

[1] Gerhardt's text reads as follows: "J'ai crû encor pouvoir profiter du travail d'autruy non seulement pour diminuer le mien (puisqu'en effect il y a moins de peine à suivre le fil d'un bon auteur qu'à travailler à nouveaux frais en tout), mais encor pour adjouter quelque chose à ce qu'il nous a donné, ce qui est tousjours plus facile que de commencer; car je crois d'avoir levé quelques difficultés qu'il avoit laissées en leur entier. Ainsi sa reputation m'est avantaguese; estant d'ailleurs d'humeur à rendre justice et bien loin de vouloir diminuer l'estime qu'on a pour cet ouvrage, je l'accroistrois, si mon approbation estoit de quelque poids. Il est vray que je suis souvent d'un autre avis, mais bien loin de disconvenir du merite des Ecrivains celebres, on leur rend temoignage, en faisant connoistre en quoy et pour quoy on s'eloigne de leur sentiment, quand on juge necessaire d'empecher que leur autorité ne prevaille à la raison en quelques points de consequence, outre qu'en satisfaisant à de si excellens hommes, on rend la verité plus recevable, et il faut supposer que c'est principalement pour elle qu'ils travaillent." — TR.

him[1]), but very far from denying the merit of celebrated writers, we bear witness to it, by making known in what and why we differ from their views, when we judge it necessary to prevent their authority from prevailing over reason on some important points; besides, by satisfying such excellent men, we render the truth more acceptable, and it must be supposed that it is principally for truth that they labor.

In fact, although the author of the Essay says a thousand beautiful things which I commend, our systems are very different. His has more relation to Aristotle, mine to Plato, although we both differ in many things from the doctrine of these two ancient philosophers. He is more popular, and I am compelled sometimes to be a little more *acroamatic* and more abstract, which is not an advantage to me, especially when writing in a living language. I think, nevertheless, that by making two persons speak, one of whom sets forth the views drawn from the Essay of this author, and the other joins thereto my observations, the parallel will be more to the liking of the reader than wholly dry remarks, the reading of which would be interrupted at every moment by the necessity of recurring to his book in order to understand mine. It will nevertheless be well still to compare sometimes our writings, and not to judge of his views except by his own work, although I have ordinarily preserved its expressions. It is true that the constraint, which another's discourse, whose thread must be followed, gives in making remarks, has prevented me from thinking to secure the charms of which the dialogue is susceptible; but I hope the matter will make amends for the defects of the style.

Our differences are upon subjects[2] of some importance. The question is to know whether the soul in itself is entirely empty as the tablets upon which as yet nothing has been written (*tabula rasa*) according to Aristotle, and the author of the Essay, and whether all that is traced thereon comes solely from the senses and from experience; or whether the soul contains originally the principles of many ideas and doctrines which external objects merely call up on occasion, as I believe

[1] Erdmann and Jacques read: "que lui," which does not occur in Gerhardt's text. — TR.

[2] Erdmann and Jacques read: "objects." — TR.

with Plato, and even with the schoolmen, and with all those who interpret in this way the passage of St. Paul (Rom. 2: 15) where he states that the law of God is written in the heart. The Stoics call these principles[1] *prolepses, i.e.* fundamental assumptions, or what is taken for granted in advance. The Mathematicians call them *general notions* (κοιναὶ ἔννοιαι). Modern philosophers give them other beautiful names, and Julius Scaliger in particular named them *semina æternitatis,* also *zopyra, i.e.* living fires, luminous flashes, concealed within us, but which the encounter of the senses makes appear like the sparks which the blow makes spring from the steel. And the belief is not without reason, that these glitterings indicate something divine and eternal which appears especially in the necessary truths. Whence another question arises, whether all truths depend upon experience, *i.e.* upon induction and examples, or whether there are some which have still another foundation. For if some events can be foreseen prior to any proof which may have been made of them, it is manifest that we ourselves contribute something thereto. The senses, although necessary for all our actual knowledge, are not sufficient to give it all to us, since the senses never give us anything but examples, *i.e.* particular or individual truths. Now all the examples which confirm a general truth, whatever their number, do not suffice to establish the universal necessity of that same truth, for it does not follow that what has happened will happen in the same way. For example, the Greeks and the Romans, and all the other peoples of the earth known to the ancients, have always observed that before the lapse of twenty-four hours day changes into night, and night into day. But we would be deceived, if we believed that the same law holds good everywhere else; for since then, the contrary has been experienced in the region of Nova Zembla. And he would still be in error who believed that, in our climates at least, this is a necessary and eternal truth, which will always endure, since we must think that the earth, and the sun even, do not necessarily exist, and that there will perhaps be a time when this beautiful star, together with its whole system, will not longer exist, at least in its present form. Whence it appears

[1] For a very full nomenclature of these principles, see Hamilton's Reid, Note A., § V., Vol. II., pp. 755–770. 8th ed., Edinburgh and London, 1880. — Tr.

that necessary truths such as are found in pure mathematics, and particularly in arithmetic and in geometry, must have principles whose proof does not depend upon examples, nor consequently upon the testimony of the senses, although without the senses it would never have occurred to us to think of them. This distinction must be carefully made, and was so well understood by Euclid, that he often proved by the reason, what is sufficiently seen through experience and by sensible images. Logic also, together with metaphysics and ethics, one of which shapes theology and the other jurisprudence, both natural (sciences), are full of such truths, and consequently their proof can come only from internal principles which are called innate. It is true that we must not imagine that these eternal laws of the reason can be read in the soul as in an open book, as the prætor's edict is read upon his *album* without difficulty and research; but it is sufficient that they can be discovered in us by dint of attention, for which the senses furnish occasions, and successful experience serves to confirm reason, in much the same way as proofs in arithmetic serve for the better avoidance of error in calculating when the reasoning is long. Herein, also, human knowledge differs from that of the brutes: the brutes are purely empirics and only guide themselves by examples; for, so far as we can judge of them, they never attain to the formation of necessary propositions; while men are capable of demonstrative sciences. It is also for this reason that the faculty the brutes have for making *consecutions* is something inferior to the reason of man. The consecutions of the brutes are merely like those of simple empirics, who claim that what has sometimes happened will happen again in a case where something strikes them as similar, without being able to judge whether the same reasons hold good. This is why it is so easy for men to entrap the brutes, and so easy for simple empirics to make mistakes. This is why persons who have become skilful through age and experience are not exempt (from error) when they depend too much upon their past experience, as has happened to many in civil and military affairs; because they do not consider sufficiently that the world changes, and that men become more skilful by finding a thousand new dexterities, while the deer and hares of the present do not become more cunning than those of the

past. The consecutions of the brutes are only a shadow of reasoning, *i.e.* are only connections of the imagination and passages from one image to another, because in a new juncture which appears similar to the preceding they expect anew that connection which they formerly met with, as if things were united in fact because their images are united in the memory. It is true that reason also counsels us to expect ordinarily to see that happen in the future which is conformed to a long past experience, but it is not on this account a necessary and infallible truth, and success may cease when least expected, when the reasons change which have sustained it. Therefore the wisest men do not so commit themselves to it as not to try to discover, if possible, something of the reason of this fact in order to judge when it is necessary to make exceptions. For reason is alone capable of establishing sure rules, and supplying what is wanting to those which were not such by inserting their exceptions; and of finding at length certain connections in the force of necessary consequences, which often furnish the means of foreseeing the result without the necessity of experiencing the sense-connections of images, to which the brutes are reduced, so that that which justifies the internal principles of necessary truths also distinguishes man from the brutes.

Perhaps our clever author will not wholly differ from my view. For after having employed the whole of his first book in rejecting innate intelligence, taken in a certain sense, he nevertheless, at the beginning of the second and in the sequel, admits that ideas, which do not originate in sensation, come from reflection. Now reflection is nothing else than attention to what is in us, and the senses do not give us what we already carry with us. That being so, can it be denied that there is much that is innate in our mind, since we are innate, so to speak, in ourselves? and that there is in us: being, unity, substance, duration, change, action, perception, pleasure, and a thousand other objects of our intellectual ideas? And these objects being immediate to our understanding and always present (although they cannot always be perceived by reason of our distractions and needs), what wonder that we say that these ideas with all depending upon them are innate in us? I have made use also of the comparison of a block of marble which

has veins, rather than of a block of marble wholly even, or of blank tablets, *i.e.* of what is called among philosophers a *tabula rasa.* For if the soul resembled these blank tablets, truths would be in us as the figure of Hercules is in the marble, when the marble is wholly indifferent to the reception of this figure or some other. But if there were veins in the block which should indicate the figure of Hercules rather than other figures, this block would be more determined thereto, and Hercules would be in it as in some sense innate, although it would be needful to labor to discover these veins, to clear them by polishing, and by cutting away what prevents them from appearing. Thus it is that ideas and truths are for us innate, as inclinations, dispositions, habits, or natural potentialities, and not as actions; although these potentialities are always accompanied by some actions, often insensible, which correspond to them.

It seems that our clever author claims that there is nothing *virtual* in us, and indeed nothing of which we are not always actually conscious; but he cannot take this rigorously, otherwise his opinion would be too paradoxical; since, moreover, acquired habits and the stores of our memory are not always perceived and do not even always come to our aid at need, although we often easily recall them to the mind upon some slight occasion which makes us remember them, just as we need only the beginning of a song to remember it.[1] He limits his thesis also in other places, by saying that there is nothing in us of which we have not at least formerly been conscious. But besides the fact that no one can be assured by reason alone how far our past *apperceptions,* which we may have forgotten, may have gone, especially according to the Platonic doctrine of reminiscence which, wholly fabulous as it is, is in no respect incompatible at least in part with reason wholly pure: besides this, I say, why must we acquire all through the perception of external things, and nothing be unearthed in ourselves? Is our soul then by itself such a blank that besides the images borrowed from without, it is nothing? This is not an opinion (I am sure) that our judicious author could approve.

[1] Erdmann and Jacques read: "le commencement d'une chanson pour nous faire ressouvenir du reste," *i.e.* the beginning of a song to remind us of the rest. — Tr.

And where do we find tablets that have no variety in themselves? For we never see a plane perfectly even and uniform. Why, then, could we not furnish also ourselves with something of thought from our own depths if we should dig therein? Thus I am led to believe that at bottom his opinion upon this point is not different from mine, or rather from the common view, inasmuch as he recognizes two sources of our knowledge, the Senses and Reflection.

I do not know whether it will be so easy to harmonize him with us and with the Cartesians, when he maintains that the mind does not always think, and particularly that it is without perception when we sleep without dreaming; and he objects [1] that since bodies can exist without motion, souls can also exist without thought. But here I make a somewhat different reply than is customary, for I hold that naturally a substance cannot exist without action, and that there is indeed never a body without movement. Experience already favors me, and you have only to consult the book of the distinguished Mr. Boyle against absolute rest, to be convinced of it; but I believe reason favors it also, and this is one of the proofs I have for doing away with atoms.

Moreover, there are a thousand indications which make us think that there are at every moment an infinite number of *perceptions* in us, but without apperception and reflection, *i.e.* changes in the soul itself of which we are not conscious, because the impressions are either too slight and too great in number, or too even, so that they have nothing sufficiently distinguishing them from each other; but joined to others, they do not fail to produce their effect and to make themselves felt at least confusedly in the mass. Thus it is that habit makes us take no notice of the motion of a mill or a waterfall when we have lived quite near it for some time. It is not that the motion does not always strike our organs, and that something no longer enters into the soul corresponding thereto, in virtue of the harmony of the soul and the body, but these impressions which are in the soul and the body, being destitute of the attractions of novelty, are not strong enough to attract our attention and our memory, attached to objects more engrossing. For all attention requires memory,

[1] Erdmann and Jacques read: "Il dit que," *i.e.* He says that. — Tr.

and often when we are not admonished, so to speak, and warned to take note of some of our own present perceptions, we allow them to pass without reflection, and even without being noticed; but if any one directs our attention to them immediately after, and makes us notice, for example, some noise which was just heard, we remember it, and are conscious of having had at the time some feeling of it. Thus there were perceptions of which we were not conscious at once, consciousness arising in this case only from the warning after some interval, however small it may be. And to judge still better of the minute perceptions which we cannot distinguish in the crowd, I am wont to make use of the example of the roar or noise of the sea which strikes one when on its shore. To understand this noise as it is made, it would be necessary to hear the parts which compose this whole, *i.e.* the noise of each wave, although each of these little noises makes itself known only in the confused collection of all the others, *i.e.* in the roar itself, and would not be noticed if the wave which makes it were alone. For it must be that we are affected a little by the motion of this wave, and that we have some perception of each one of these noises, small as they are; otherwise we would not have that of a hundred thousand waves, since a hundred thousand nothings cannot make something. One never sleeps so soundly as not to have some feeble and confused sensation, and one would never be awakened by the greatest noise in the world if he did not have some perception of its small beginning; just as one would never break a rope by the greatest effort in the world if it were not stretched and lengthened a little by smaller efforts, although the slight extension they produce is not apparent.

These minute perceptions are, then, of greater efficacy in their results than one supposes. They form I know not what, these tastes, these images of the sense-qualities, clear in the mass, but confused in the parts, these impressions which surrounding bodies make upon us, which involve the infinite, this connection which each being has with all the rest of the universe. We may even say that in consequence of these minute perceptions, the present is big with the future and laden with the past, that all things conspire (*σύμπνοια πάντα*, as Hippocrates said), and that in the least of substances eyes as

penetrating as those of God could read the whole course of the things in the universe.

Quæ sint, quæ fuerint, quæ mox futura trahantur.[1]

These insensible perceptions indicate also and constitute the same individual who is characterized by the traces or expressions which they conserve of preceding states of this individual, in making the connection with his present state; and they can be known by a superior mind, even if this individual himself should not be aware of them, *i.e.* when there would no longer be in him the express recollection of them. But they (these perceptions, I say) furnish, indeed, the means of finding again this recollection at need by the periodic developments which may some day happen. It is for this reason that death can be only a sleep, and cannot, indeed, continue, the perceptions ceasing merely to be sufficiently distinguished, and being reduced in the animals to a state of confusion which suspends consciousness, but which cannot last always; not to speak[2] here of man, who must have in this regard great privileges in order to preserve his personality.

It is also by means of the insensible perceptions that this admirable pre-established harmony of the soul and the body, and indeed of all the monads or simple substances, is explained;[3] which supplies the place of the unmaintainable influence of one upon the others, and which in the judgment of the author of the most excellent of dictionaries exalts the grandeur of the divine perceptions beyond what has ever been conceived. After this I would add little if I should say that it is these minute perceptions which *determine* us in many junctures without being thought of, and which deceive the vulgar by the appearance of an *indifference of equilibrium*, as if we were entirely indifferent whether we turned (for example) to the right or to the left. It is not needful also that I notice here, as I have done in the book itself, that they cause that *uneasiness* which I show to consist in something which differs from pain only as the small from the great, and which, however, often constitutes our desire and even our

[1] Erdmann reads: *quæ* mox, etc.; Jacques: *quæ* mox *ventura* trahantur. Gerhardt's reading: "que" is evidently an error. — Tr.

[2] Erdmann and Jacques omit: "pour ne parler icy de l'homme qui doit avoir en cela des grands privileges pour garder sa personalité." — Tr.

[3] Erdmann and Jacques read "j'explique," I explain. — Tr.

pleasure by giving to it an exciting flavor. It is also[1] the insensible parts of our sensible perceptions, which produce a relation between the perceptions of colors, heat, and other sensible qualities, and between the motions in bodies which correspond to them; while the Cartesians together with our author, penetrating as he is, conceive the perceptions which we have of these qualities as arbitrary, *i.e.* as if God had given them to the soul according to his good pleasure, without any regard to any essential relation between these perceptions and their objects: a view which surprises me and which appears to me little worthy of the wisdom of the Author of things, who does nothing without harmony and without reason.

In a word, *the insensible perceptions* are as eminently useful in Pneumatology[2] as are the insensible corpuscles in Physics, and it is equally unreasonable to reject the one or the other under the pretext that they are out of reach of our senses. Nothing is accomplished all at once, and it is one of my great maxims, and one of the most verified, that *nature makes no leaps:* a maxim which I called the *Law of Continuity,* when I spoke of it in the first "Nouvelles de la République des Lettres,"[3] and the use of this law is very considerable in Physics. This law declares that we pass always from the small to the great, and the reverse, through the medium, in degree as in parts, and that motion never springs immediately from rest, nor is reduced thereto save by a smaller motion, as one never completes the survey of any line or length until he has completed a smaller line, although hitherto those who have set forth the laws of motion have not observed this law, believing that a body can receive in a moment a motion contrary to the preceding. And all this makes one indeed think that the

[1] Erdmann and Jacques read: "Ce sont les mêmes parties insensibles," etc., It is the same insensible parts, etc. — TR.

[2] *I.e.* Psychology. *Cf.* Hamilton's Reid, 8th ed., Vol. I., p. 217 a, and note. — TR.

[3] A literary journal published by Pierre Bayle at Amsterdam, 1684–1687; afterwards continued, at Bayle's request, by Basnage, under the title "Histoire de ouvrages des Savants," 1687–1709. Leibnitz published in this journal in July, 1698, his *Eclaircissement des difficultés que M. Bayle a trouvées dans le système nouveau de l'union de l'âme et du corps.* Gerhardt, Vol. 4, pp. 517–524; Erdmann, pp. 150–154; Jacques, Vol. 1, pp. 481–487. Translation, Appendix, pp. 706–712. — TR.

noticeable perceptions also arise by degrees from those which are too minute to be observed. To think otherwise, is to have little knowledge of the immense subtilty of things which always and everywhere surrounds an actual infinite.

I have also noticed that in virtue of these insensible variations, two individual things cannot be perfectly alike, and that they must always differ more than *numero:* a fact which destroys the blank tablets of the soul, a soul without thought, a substance without action, a vacuum in space, atoms and even particles not actually divided in matter, absolute rest, entire uniformity in one portion of time, place, or matter, perfect globes of the second element, born of cubes perfect and original, and a thousand other fictions of philosophers which arise from their incomplete notions, and which the nature of things does not allow, and which our ignorance and the little attention we give to the insensible let pass, but which cannot be made tolerable unless they are limited to the abstractions of the mind which protests that it does not deny what it puts aside, and thinks should not enter into any present consideration. Otherwise if it were very well understood, viz.: that things of which we are not conscious are neither in the soul nor the body, we should be lacking in philosophy as in politics, in neglecting τὸ μικρόν, the insensible progressions, while an abstraction is not an error, provided we know what it is that we feign therein. Just as the mathematicians employ it when they speak of the perfect lines which they propose to us, of uniform motions and of other regulated effects, although *matter* (*i.e.* the medley of the effects of the surrounding infinite) always makes some exception. It is for the sake of distinguishing the considerations and of reducing so far as we may do so the effects to reasons, and of foreseeing some of their consequences, that we proceed thus. For the more we are careful to neglect no consideration that we can regulate, the more practice corresponds to theory. But it belongs only to the supreme Reason, whom nothing escapes, distinctly to comprehend all the infinite and to see all the reasons and all the consequences. All that we can do in regard to infinites is to know them confusedly, and to know at least distinctly that they are such; otherwise we judge very wrongly of the beauty and the grandeur of the universe; so also we could not have a sound Physics explaining

the nature of bodies in general, and still less a proper Pneumatology comprising the knowledge of God, of souls, and of simple substances in general.

This knowledge of insensible perceptions serves also to explain why and how two souls, human or otherwise,[1] of one and the same species never come forth perfectly alike from the hands of the Creator and have always each its original relation to the points of view which it will have in the universe. But this it is which already follows from the remarks I have made about two individuals, viz.: that their *difference* is always *more than numerical.* There is, moreover, another point of importance, in respect to which I am obliged to deviate not only from the opinions of our author, but also from those of the majority of modern philosophers: I believe with the majority of the ancients that all genii,[2] all souls, all simple created substances, are always joined to a body, and that there are never souls entirely separated. I have *a priori* reasons for my view; but the doctrine will be found to have this advantage, that it resolves all the philosophical difficulties as to the condition of souls, their perpetual conservation, their immortality, and their operation. The difference between one of their states and another, never being and never having been other than that of more sensible to less sensible, of more perfect to less perfect, or the reverse, this doctrine renders their past or future state as explicable as that of the present. One feels sufficiently, however little reflection he makes, that this is rational, and that a leap from one state to another infinitely different could not be natural. I am astonished that by leaving the natural without reason, the schoolmen have been willing purposely to plunge themselves into very great difficulties, and to supply matter for apparent triumphs of the strong-minded, all of whose reasons fall at once by this explanation of things, in which there is no more difficulty in conceiving the conservation of souls (or rather, according to my view, of the animal) than there is in conceiving the change of the caterpillar into the butterfly, and the conservation of thought in sleep, to which Jesus Christ has divinely well compared death. I have already said also that sleep could not

[1] Erdmann reads: "ou deux choses," or two things. — TR.
[2] *I.e.* Angels and archangels. — TR.

last always, and it will last least or almost not at all in the case of rational souls who are always destined to preserve the personality which has been given them in the City of God, and consequently remembrance: and this in order to be more susceptible of chastisements and recompenses. And I add further that in general no derangement of the visible organs is capable of throwing things into entire confusion in the animal or of destroying all the organs and depriving the soul of all its organic body and of the ineffaceable remains of all preceding traces. But the ease with which the ancient doctrine of subtile bodies connected with the angels (which was confounded with the corporeality of the angels themselves) has been abandoned, and the introduction of pretended separate intelligences in creatures (to which those who make the heavens of Aristotle revolve have contributed much), and finally the poorly understood view into which we have fallen, that the souls of brutes could not be preserved without falling into metempsychosis, and[1] without conducting them from body to body, and the perplexity into which men have fallen by their ignorance of what to do with them, have caused us, in my opinion, to neglect the natural explanation of the conservation of the soul. This has done much harm to natural religion, and has caused many to believe that our immortality was only a miraculous grace of God, of which also our celebrated author speaks with some hesitation, as I shall presently remark. But it would be well had all those who are of this opinion spoken as wisely and in as good faith as he, for it is to be feared that many who speak of immortality as a grace do so only to keep up appearances, and resemble at bottom these Averroists and some bad Quietists who picture to themselves an absorption and the reunion of the soul with the ocean of divinity: a notion whose impossibility my system alone perhaps evinces.

It seems also that we differ further in regard to matter, in that the author thinks that a vacuum is necessary to motion, because he thinks that the minute parts of matter are rigid. And I admit that if matter were composed of such parts,

[1] Gerhardt's text is: "et sans les promener de corps en corps, et l'embarras où l'on a esté en ne sachant ce qu'on en devoit faire." Erdmann and Jacques omit the clause. — TR.

motion in a *plenum* would be impossible, as if a room were full of a quantity of little pebbles without there being the least empty space. But this supposition, for which there appears also to be no reason, is not admissible, although this learned author goes as far as to believe that rigidity or cohesion of the minute parts makes the essence of the body. It is necessary rather to conceive space as full of a matter originally fluid, susceptible of all the divisions, and even actually subject to divisions and subdivisions to infinity, but with this difference, however, that it is divisible and divided unequally in different parts on account of the motions which more or less concur there. This it is which causes matter to have everywhere a degree of rigidity as well as of fluidity, and no body to be hard or fluid in the highest degree, *i.e.* no atom to be found of an insurmountable hardness nor any mass entirely indifferent to division. The order, also, of nature, and particularly the law of continuity, destroy equally the one and the other.

I have also shown that *cohesion*, which by itself would not be the effect of impulse or of motion, would cause a *traction*, taken strictly. For if there were a body originally rigid, — for example, an Epicurean atom, — which should have a part projecting like a hook (since we can imagine atoms of all sorts of shapes), this hook pushed would draw with it the rest of this atom; *i.e.* the part which is not pushed, and which does not fall in the line of the impulsion. Our learned author, however, is for himself opposed to these philosophic tractions, such as were formerly attributed to the abhorrence of a vacuum, and he reduces them to *impulsions*, maintaining with the moderns that one part of matter works immediately upon another only by pushing it by contact, in which I think they are right, because otherwise there is nothing intelligible in the operation.

I must not, however, conceal the fact that I have noticed a sort of retraction by our excellent author on this subject, whose modest sincerity I cannot forbear praising in this respect as much as I have admired on other occasions his penetrating genius. It is in his reply to the second letter of the late Bishop of Worcester,[1] printed in 1699, p. 408, where,

[1] Edward Stillingfleet, 1635–1699: Bishop of Worcester, 1689–1699. — Tr.

in order to justify the view which he had maintained against this wise prelate, viz.: that matter might think, he says among other things: "*I admit that I said* (Essay on Understanding, Book II. chap. 8, § 11) *that body acts by impulse and not otherwise. This also was my view when I wrote it, and even now I cannot conceive its action in any other way. But since then I have been convinced by the judicious Mr. Newton's incomparable book that there is too much presumption in wishing to limit the power of God by our limited conceptions. The gravitation of matter towards matter in ways inconceivable to me, is not only a demonstration that God, when it seems to him good, can put into bodies powers and modes of acting which are beyond what can be derived from our idea of body or explained by what we know of matter; but it is furthermore an incontestable instance that he has really done so. I shall therefore take care to correct this passage in the next edition of my book.*"[1] I find that in the French version of this book, made undoubtedly from the latest editions, the matter has been put thus in this § 11: *It is evident,* at least so far as we can conceive it, *that it is by impulse and not otherwise that bodies act on each other; for it is impossible for us to understand how the body can act upon what it does not touch, which is the same as to imagine that it can act where it is not.*

I can only praise this modest piety of our celebrated author, who recognizes that God can do more than we can understand, and that thus there may be inconceivable mysteries in the articles of faith; but I should not wish to be obliged to recur to the miracle in the ordinary course of nature and to admit powers and operations absolutely inexplicable. Otherwise too much license will be given poor philosophers, under cover of what God can do, and by admitting these *centripetal virtues* or these *immediate attractions* from afar without being able to make them intelligible, I see nothing to hinder our Scholastics from saying that everything is done simply by their faculties and from maintaining their intentional species which proceed

[1] I have retranslated the passage from the French version, as given by Gerhardt. For the original, *cf.* Locke, *Philos. Works* (Bohn's ed.), Vol. II., p. 395. The entire letter is found in Locke's Works, Vol. I., pp. 578–774; this particular passage, p. 754. Edition of 4 vols., 4to. 7th ed., 1768. Printed for H. Woodfall, A. Millar, and others. — TR.

from objects even to us and find means of entering even into our souls. If that is so,

Omnia jam fient, fieri quæ posse negabam.

So that it seems to me that our author, quite judicious as he is, goes here a little too much from one extreme to the other. He makes a difficulty in regard to the operations of *souls* when the question is only of admitting what is not *sensible*, and behold he gives to *bodies* what is not even *intelligible;* granting them powers and actions which surpass in my view all that a created spirit can do and understand, since he grants them attraction, and that even at great distances without limiting them to any sphere of activity, and this in order to maintain a view which does not appear less inexplicable, viz.: the possibility of the thought of matter in the natural order.

The question which he discusses with the celebrated Prelate who attacked him, is, *whether matter can think*, and as it is an important point even for the present work, I cannot refrain from entering upon it a little and from taking note of their controversy. I will give the substance of their discussion upon this subject, and take the liberty of saying what I think of it. The late Bishop of Worcester, fearing (but in my opinion without good reason) lest our author's doctrine of ideas might be liable to certain abuses prejudicial to the Christian faith, undertook to examine some points in it in his "Vindication of the Doctrine of the Trinity";[1] and having rendered justice to this excellent writer, by recognizing that he thinks the existence of spirit as certain as that of body, although one of these substances is as little known as the other, he asks (p. 241 *sq.*) how reflection can assure us of the existence of spirit, if God can give to matter the power of thought according to the view of our author, Book IV., chap. 3, since thus the way of ideas which must serve to discern[2] what may suit the soul or the body, would become useless; while he had said in Book II. of the Essay on Understanding, chap. 23, §§ 15, 27, 28, that the operations of the soul furnish us the idea of mind and the

[1] Published in the autumn of 1696. *Cf.* Alexander Campbell Fraser, *Locke*, pp. 245–246 (Philosophical Classics), Edinburgh: Wm. Blackwood and Sons, 1890. — Tr.

[2] Gerhardt reads: "discerner"; Erdmann and Jacques: "discuter," to discuss, debate, argue. — Tr.

understanding, and the will renders this idea as intelligible to us as the nature of body is rendered intelligible to us by solidity and impulse. This is how our author replies in his first letter (p. 65 *sq.*): "*I believe I have proved that there is a spiritual substance in us, for we experience in ourselves thought. Now this action or this mode cannot be the object of the idea of a thing subsisting by itself, and consequently this mode needs a support, a subject, in which it may inhere, and the idea of this support forms what we call substance.* . . . For since the general idea of substance is everywhere the same, *it follows that the modification, which is called thought or power of thinking, being joined to it, there results a mind without the necessity of considering what other modification it has besides; i.e. whether it has solidity or not. And, on the other hand, the substance which has the modification called solidity will be matter, whether thought is joined to it or not. But if by a spiritual substance you mean an immaterial substance, I admit that I have not proved that there is one in us, and that it cannot be demonstrably proved on my principles. Although what I have said on the systems of matter* (Book IV., chap. 10, § 16) *in proving that God is immaterial, renders it in the highest degree probable, that the substance which thinks in us is immaterial.* . . . *However, I have shown* [the author adds, p. 68] *that the great ends of religion and of morals are assured by the immortality of the soul, without the need of supposing its immateriality.*" [1]

The learned Bishop in his reply to this letter, in order to make it evident that our author held another view, when he wrote the second book of the Essay, quotes, p. 51, this passage (taken from the same book, chap. 23, § 15), where it is said, *that by the simple ideas which we have deduced from the operations of our mind, we can form the complex idea of a mind. And that putting together the ideas of thought, of perception, of liberty, and of power to move our body, we have as clear a notion of immaterial substances as of material.* He quotes still other passages to show that the author opposes mind to body. And he says (p. 54) that the ends of religion and of morals are the better

[1] I have retranslated the passage from the French version as given by Gerhardt. For the original, *cf.* Locke, *Philos. Works* (Bohn's ed.), Vol. II., p. 387. The entire letter is found in Locke's Works, Vol. I., pp. 458–517; this particular passage, p. 477. Edition of 4 vols., 4to. 7th ed., 1768. Printed for H. Woodfall, A. Millar, and others. — TR.

assured by proving that the soul is immortal by its nature, *i.e.* immaterial. He quotes also (p. 70) this passage, *that the ideas we have of particular and distinct kinds of substances are nothing else than different combinations of simple ideas;*[1] and that thus the author believed that the idea of thinking and of willing gave another substance different from that which the idea of solidity and of impulse gives, and that (§ 17) he remarks that these ideas constitute the body as opposed to mind.

The Bishop of Worcester might add that from the fact that the *general idea* of substance is in the body and in the mind, it does not follow that their *differences* are *modifications* of one and the same thing, as our author has just said in the part of his first letter which I have quoted. It is necessary carefully to distinguish between modifications and attributes. The faculties of having perception and of acting, extension, solidity, are attributes or perpetual and principal predicates; but thought, impetuosity, figures, movements, are modifications of these attributes. Furthermore, we must distinguish between *physical* (or, rather, real) *genus* and *logical* or ideal *genus.* Things which are of the same physical genus, or which are *homogeneous*, are of the same *matter*, so to speak, and may often be changed the one into the other by the change of modification, as circles and squares. But two *heterogeneous* things may have a common logical genus, and then their *differences* are not simple accidental modifications of one and the same subject, or of one and the same metaphysical or physical matter. Thus time and space are very heterogeneous things, and we should do wrong to imagine I know not what real common subject which had only the continuous quantity in general, and whose modifications should cause the rise of time and space.[2] Some one will perhaps laugh at these distinctions of the philosophers of two genera, the one merely logical, the other real; and of two matters, the one physical, viz.: that of bodies, the other metaphysical only or general; as if some one said that two parts of space are of one and the same matter, or that two hours are likewise among themselves of one and

[1] Locke, *Philos. Works* (Bohn's ed.), Vol. 1, p. 426, chap. 23. § 6. — Tr.

[2] Erdmann and Jacques add: "Cependant leur genre logique commun est la quantité continuë," *i.e.* Nevertheless their common logical genus is the continuous quantity. — Tr.

the same matter. Nevertheless, these distinctions are not distinctions of terms merely, but of things themselves, and seem to come in here very opportunely, where their confusion has given rise to a false conclusion. These two genera have a common notion, and that of the real genus is common to the two matters, so that their genealogy will be as follows: —

Genus { *Logical* merely, varied by simple *differences*.
Real, whose *differences* are *modifications*, i.e. *Matter*. { *Metaphysical* only, where there is homogeneity. / *Physical*, where there is a solid homogeneous mass.

I have not seen the second letter of the author to the Bishop, and the reply which this prelate makes to it scarcely touches the point relating to the thinking of matter. But the reply of our author to this second answer returns to it. *God* (says he, nearly in these words, p. 397) *adds to the essence of matter the qualities and perfections which please him, simple movement in some parts, but in plants, vegetation, and in animals, sentiency. Those who agree up to this point, cry out as soon as we go a step farther, and say that God can give to matter thought, reason, will, as if this destroyed the essence of matter. But to prove it, they allege that thought or reason is not included in the essence of matter, a point of no consequence, since movement and life are not included therein either. They assert, also, that we cannot conceive of matter as thinking; but our conception is not the measure of God's power.*[1] After this he cites the example of the attraction of matter (p. 99, but especially p. 408), where he speaks of the gravitation of matter towards matter, attributed to Mr. Newton (in the terms which I have quoted above), admitting that we can never conceive the manner of it. This is in reality to return to the occult, or, what is more, inexplicable qualities. He adds (p. 401) that nothing is more calculated to favor the sceptics than to deny what we do not understand; and (p. 402) that we do not conceive even how the soul thinks. He will have it (p. 403) that, since the two sub-

[1] For the original, *cf.* Locke, *Philos. Works* (Bohn's ed.), Vol. 2, pp. 390, 391. The entire letter is found in Locke's Works, Vol. 1, pp. 578–774; this particular passage, pp. 749, 750. Edition of 4 vols., 4to. 7th ed., 1768. Printed for H. Woodfall, A. Miller, and others. — TR.

stances, material and immaterial, are capable of being conceived in their naked essence without any activity, it depends upon God to give to each the power of thought. And he wishes to take advantage of the admission of his opponent, who had granted sentiency to the brutes, but who would not grant them any immaterial substance. He claims that liberty, consciousness (p. 408), and the power of abstract thought (p. 409) can be bestowed upon matter, not as matter, but as enriched by a divine power. Finally, he quotes (p. 434) the remark of a traveller as eminent and judicious as M. de la Loubère,[1] that the pagans of the East acknowledge the immortality of the soul without being able to comprehend its immateriality.

On all this I would remark, before coming to the explanation of my view, that it is certain that matter is as little capable of mechanically producing feeling, as of producing reason, as our author admits; that in truth I acknowledge that it is not permissible to deny what we do not understand, but I add that we are right in denying (at least in the natural order) what is absolutely neither intelligible nor explicable. I maintain, also, that substances (material or immaterial) cannot be conceived in their naked essence without any activity; that activity belongs to the essence of substance in general; that, finally, the conception of creatures is not the measure of God's power, but that their conceptivity, or power of conception, is the measure of nature's power; all this is in harmony with the natural order, being capable of being conceived or understood by some creature.

Those who understand my system will think that I cannot wholly agree with the one or the other of these two excellent authors, whose discussion, however, is very instructive. But to explain myself distinctly, it is necessary before all things to consider that the modifications which may belong naturally or without miracle to a subject must come to it from the limitations or variations of a real genus, or of a constant and absolute original nature. For it is thus that Philosophers dis-

[1] La Loubère, Simon de, 1642–1729. Sent by Louis XIV. in 1687 to Siam, to establish diplomatic and commercial relations between that kingdom and France. While there he collected a large amount of exact and interesting information concerning the country, its history, customs, religion, etc., which, on his return, he published in his *Du royaume de Siam*, Paris, 1691; English translation, London, 1693. — Tr.

tinguish the modes of an absolute being from that being itself; as it is known that size, figure, and movement are manifestly limitations and variations of corporeal nature. For it is clear how a limited extension gives figures, and that the change which is made in it is nothing but motion. And whenever we find any quality in a subject, we must believe that if we understood the nature of this subject and of this quality, we should conceive how this quality can result therefrom. Thus in the order of nature (miracles aside) it is not optional with God to give to substances indifferently such or such qualities, and he will never give to them any, save those which will be natural to them, *i.e.* which can be derived from their nature as explicable modifications. Thus it may be asserted that matter will not naturally possess the attraction mentioned above, and will not proceed of itself in a curved line, because it is impossible to conceive how this takes place there, *i.e.* to explain it mechanically, while that which is natural must be capable of becoming distinctly conceivable if we were admitted into the secrets of things. This distinction between what is natural and explicable and what is inexplicable and miraculous removes all the difficulties, and by rejecting it, we should maintain something worse than the occult qualities; and in so doing would renounce philosophy and reason, by opening retreats for ignorance and idleness, though a dead system, which admits not only that there are qualities which we do not understand, of which there are only too many, but also that there are some which the greatest mind, if God gave him every possible opening, could not comprehend, *i.e.* which would be either miraculous or without rhyme and reason; and also that God should work miracles ordinarily would be without rhyme and reason, so that this hypothesis would destroy equally our philosophy which seeks reasons, and the divine wisdom which furnishes them.

Now as to thought, it is certain, and the author admits it more than once, that it could not be an intelligible modification of nature or one which could be comprised therein and explained, *i.e.* that a being who feels and thinks is not a mechanism like a watch or a mill, so that we might conceive sizes, figures, and movements, whose mechanical conjunction might produce something thinking, and even feeling in a mass in

which there was nothing of the kind, which would cease also in the same manner upon the derangement of this mechanism. It is not then a natural thing for matter to feel and think, and this can happen within it only in two ways, of which one will be that God should unite with it a substance to which thought is natural, and the other that God by a miracle should put thought therein. In this, then, I am wholly of the opinion of the Cartesians, except that I extend it even to the brutes, and that I believe they have sentiency and (properly speaking) immaterial souls, and are as imperishable as the atoms of Democritus or Gassendi, while the Cartesians, perplexed without reason by the souls of brutes, and not knowing what they are to do with them if they are preserved (for want of having thought of the conservation of the same animal reduced to miniature), have been compelled to refuse even sentiency to the animals against all appearances and contrary to the judgment of the human race. But if any one should say that God at least may add the faculty of thinking to the prepared mechanism, I should reply that if this were done, and if God added this faculty to matter without putting therein at the same time a substance which was the subject of inhesion of this same faculty (as I conceive it), *i.e.* without adding thereto an immaterial soul, it would be necessary that matter should be miraculously exalted in order to receive a power of which it is naturally incapable; as some scholastics [1] claim that God exalts fire even to the point of giving it the force to burn immediately spirits separated from matter, a thing which would be a miracle, pure and simple. And it is enough that it cannot be maintained that matter thinks without putting into it an imperishable soul, or a miracle, and that thus the immortality of our souls follows from what is natural, since their extinction can be maintained only by a miracle, whether by exalting matter or by annihilating the soul. For we know well that God's power can make our souls mortal, wholly immaterial (or immortal by nature alone) as they may be, since he can annihilate them.

Now this truth of the immateriality of the soul is undoubt-

[1] Erdmann and Jacques read: "Quelques scholastiques ont prétendu quelque chose d'approchant savoir," *i.e.* Some scholastics have claimed something like this: viz. — TR.

edly of importance. For it is infinitely more advantageous to religion and morality, especially in our times (when many people hardly respect revelation alone and miracles [1]), to show that souls are immortal by nature, — and that it would be a miracle if they were not, — than to maintain that our souls ought naturally to die, but that it is in virtue of a miraculous grace grounded in the promise of God alone that they do not die. Also for a long time it has been known that those who have desired to destroy natural religion and to reduce all to revealed religion, as if reason taught us nothing regarding it, have been looked upon with suspicion; and not always without reason. But our author does not belong to that number. He maintains the demonstration of the existence of God, and he attributes to the immateriality of the soul a *probability in the highest degree*, which could consequently pass for a *moral certainty*, so that I think that, having as much sincerity as penetration, he could easily accommodate himself to the doctrine which I have just set forth, and which is fundamental in every rational philosophy. For otherwise I do not see how one can prevent himself from falling back into the *fanatical philosophy*,[2] such as the "Philosophia Mosaica" of Fludd,[3] which saves all phenomena by attributing them to God immediately and by miracle; or into the *barbaric* philosophy like that of certain philosophers and physicians of the past, which still manifested the barbarity of their age, and which to-day is with reason despised, who saved appearances by forging purposely occult qualities or faculties which they imagined to be like little demons or goblins capable of producing without ceremony what is demanded, just as if watches marked the hours by a certain horodeictic faculty without needing wheels, or as if mills ground the grain by a fractive faculty without needing anything resembling millstones. As to the difficulty that many people have had in conceiving an immaterial substance, it will easily cease (at least in good part) if they will not demand substances separated from matter, as in fact I do not believe there ever are any naturally among creatures.

[1] Erdmann and Jacques omit this clause. — Tr.

[2] Erdmann and Jacques read: "la philosophie ou fanatique," *i.e.* philosophy or fanaticism. — Tr.

[3] Robert Fludd (1574–1637), an English physician and mystical philosopher. The *Philosophia Mosaica* was published at Gouda in 1638. — Tr.